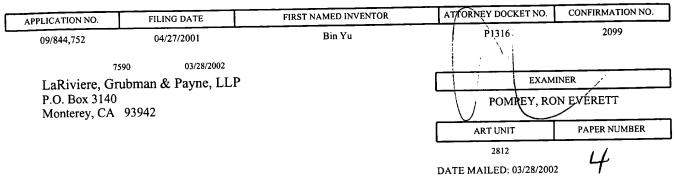




UNITED STATES PATENT AND TRADEMARK OFFICE

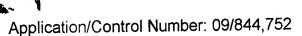


UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231 www.uspto.gov



Please find below and/or attached an Office communication concerning this application or proceeding.

 		Application	n No.	Applicant(s)	
	i	09/844,752	2	YU, BIN	
Office Action Summary		Examiner Art Unit		Art Unit	· · · · · · · · · · · · · · · · · · ·
		Ron E Pon	npey	2812	
eriod fo	The MAILING DATE of this communication ap or Reply	pears on the	cover sheet with the c	orrespondence address	
THE I - External exte	ORTENED STATUTORY PERIOD FOR REPL MAILING DATE OF THIS COMMUNICATION. nsions of time may be available under the provisions of 37 CFR 1. SIX (6) MONTHS from the mailing date of this communication. period for reply specified above is less than thirty (30) days, a reproperiod for reply is specified above, the maximum statutory period re to reply within the set or extended period for reply will, by statutely received by the Office later than three months after the mailing patent term adjustment. See 37 CFR 1.704(b).	136(a). In no ever oly within the statut will apply and will e. cause the appli	nt, however, may a reply be tin ory minimum of thirty (30) day expire SIX (6) MONTHS from pation to become ABANDONE	nely filed s will be considered timely. the mailing date of this communi D (35 U.S.C. § 133).	ication.
1)	Responsive to communication(s) filed on	<u> </u>			
2a)□	This action is FINAL. 2b)⊠ T	his action is i	non-final.		
3) <u> </u>	Since this application is in condition for allow closed in accordance with the practice under ion of Claims	vance except r <i>Ex parte</i> Qι	for formal matters, p layle, 1935 C.D. 11, 4	rosecution as to the me 453 O.G. 213.	erits is
4)⊠	Claim(s) 1-11 is/are pending in the application	n.			
	4a) Of the above claim(s) is/are withdra	awn from cor	sideration.		
5)	Claim(s) is/are allowed.				
6)⊠	Claim(s) 1-11 is/are rejected.				
7) 🗌	Claim(s) is/are objected to.				
•	Claim(s) are subject to restriction and/ion Papers	or election re	equirement.		
	The specification is objected to by the Examin	er.			
, —	The drawing(s) filed on is/are: a) acc		objected to by the Exa	miner.	
10/	Applicant may not request that any objection to t				
11)	The proposed drawing correction filed on				
,_	If approved, corrected drawings are required in r				
12)	The oath or declaration is objected to by the E	xaminer.			
Priority	under 35 U.S.C. §§ 119 and 120				
_	Acknowledgment is made of a claim for foreign	gn priority un	der 35 U.S.C. § 119(a)-(d) or (f).	
	∏ All b)☐ Some * c)☐ None of:				
•	1. Certified copies of the priority document	nts have bee	n received.		
	2. Certified copies of the priority docume			tion No	
*	3. Copies of the certified copies of the pri application from the International E See the attached detailed Office action for a list	iority docume Bureau (PCT	ents have been receiv Rule 17.2(a)).	ed in this National Stag	je
	Acknowledgment is made of a claim for domes				olication).
	a) \square The translation of the foreign language p	rovisional ap	plication has been re	ceived.	
	Acknowledgment is made of a claim for dome	stic priority u	naer 35 U.S.C. §§ 12	o and/or 121.	
Attachme			A)	ny (PTO 413) Papar No(a)	
2) Not	ice of References Cited (PTO-892) ice of Draftsperson's Patent Drawing Review (PTO-948) rmation Disclosure Statement(s) (PTO-1449) Paper No(s)			ry (PTO-413) Paper No(s) I Patent Application (PTO-15:	
S. Patent and	Trademark Office	Action Summa		Part of Par	or No. 4



Art Unit: 2812

DETAILED ACTION

Claim Rejections - 35 USC § 103

- 1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 2. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 6,190,977) in further view of Hori et al. (US 5,320,974).

Wu discloses the steps of :

For claims 1-3, 5, 6, 8 and 10:

providing a gate oxide and gate;

performing a source/drain extension implant (30, fig. 4);

forming spacer on the gate;

performing epitaxy to form raised source/drain regions (26, fig. 5); and forming a silicide (32 a,b, fig. 7) on the gate and source/drain regions (col. 5, ln. 5 – col. 6, ln. 37).

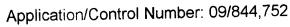
3. Wu discloses the claimed invention except for the limitations disclosed below by Hori.

For claims 1, 4, 5, 9, 10 and 11:

removing the spacer (fig. 1C);

performing a halo implant (10 a, b, fig. 1C) (col. 6, ln. 50 - col. 7, ln. 11).





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Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hori with Wu, because the halo implant decreases the parasitic junction capacitance.

4. Wu and Hori disclose the claimed invention except for the vertical implant depth of either the source/drain extension or the halo. However it would have been obvious to one of ordinary skill in the art at the time the invention was made to implant the dopants at the claimed ranges of depth, for claims 2, 4, 5, 9 and 10, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. Also, the examiner takes official notice that it is well known in the art to remove a spacer with a wet chemistry. Therefore the limitation of claim 7, hold no patentable weight that is not already known to those of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron E Pompey whose telephone number is (703) 305-3016. The examiner can normally be reached on flex schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Ron Pompey Art Unit: 2812 March 23, 2002

John F. Niebling
Sugarylaary Patent Examiner
Technology Center 2800